

10/562038

IAP20 Rec'd PCT/PTO 22 DEC 2005

Docket No.: 0365-0661PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Terho KUTILAINEN et al.

Application No.: NEW

Confirmation No.:

Filed: December 22, 2005

Art Unit: N/A

For: ELECTROMECHANICAL TRANSDUCER
AND A PRODUCTION METHOD

Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The PTO is requested to use the amended sheets/claims attached hereto (which correspond to Article 19 amendments or to claims attached to the International Preliminary Examination Report (Article 34)) during prosecution of the above-identified national phase PCT application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §1.16 or 1.14; particularly, extension of time fees.

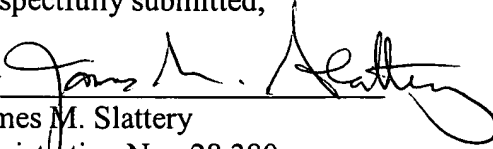
Application No.: NEW

Docket No.: 0365-0661PUS1

Dated: December 22, 2005

Respectfully submitted,

By



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Attachment(s)

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(PCT Rule 71.1)

To:

SEPPO LAINE OY
Itämerenkatu 3 B
FI-00180 HELSINKI
FINLANDE

Date of mailing
(day/month/year)

29.11.2005

Applicant's or agent's file reference
ASPE1PCT

IMPORTANT NOTIFICATION

International application No.
PCT/FI2004/000382

International filing date (day/month/year)
23.06.2004

Priority date (day/month/year)
25.06.2003

Applicant
ASPERATION OY et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Schalinatus, D

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference ASPE1PCT		FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/FI2004/000382		International filing date (day/month/year) 23.06.2004	Priority date (day/month/year) 25.06.2003	
International Patent Classification (IPC) or national classification and IPC H04R7/02				
Applicant ASPERATION OY et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 4 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 25.04.2005		Date of completion of this report 29.11.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Coda, R Telephone No. +49 89 2399-2802		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

10/562038

International application No.
PCT/FI2004/000382

IAP20 Rec'd PCT/10 22 DEC 2005

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-12 as originally filed

Claims, Numbers

1-18 filed with telefax on 17.11.2005

Drawings, Sheets

1/8-8/8 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/FI2004/000382

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	3, 10, 14, 17
	No: Claims	1, 2, 4-9, 11-13, 15, 16, 18
Inventive step (IS)	Yes: Claims	
	No: Claims	3, 10, 14, 17
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/FI2004/000382

IAP20 Rec'd PCT/10 22 DEC 2005

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:
D1: WO 97 39464 A1
D3: US-A-5 982 709
2. The subject-matter of claims 1, 2, 4 to 9, 11 to 13, 15, 16 and 18 is not new (Art. 33(2) PCT).
 - 2.1 As far as the general disclosure of D1 is concerned, it is noted that D1 describes the possibility of creating an electromechanical transducer, composed of a multiplicity of units like the one disclosed in figure 3 (see page 15, lines 10 to 12). In this case, multiple microphones are located on a common substrate wafer (see page 15, lines 20, 21) to create a microphone, i.e. an electromechanical transducer, for a portable telecommunication device. Therefore, the common back plate discloses an array of parallel vibrators.
With respect to the amended independent claim 1, D1 discloses in particular a membrane arranged, with the aid of support structures against one of the electrodes, which is relatively rigid, so that vibration mainly takes place in the vibrating membrane, while the said electrode remains essentially immobile (see page 8, lines 16 to 20; figure 3).
Moreover, D1 discloses an electromechanical transducer for converting sound energy into an electric signal, with a membrane (see page 4, lines 6 to 10), two electrodes (see page 5, line 19; page 8, lines 16 to 20; figure 3(4, 15, 30, 32)), the electric field between which can be controlled or measured, and a support structure, on which the membrane is arranged to vibrate, interacting with the electric field (see page 9, lines 18 to 21), and which support structure includes several support points, which are positioned in such a way that several parallel vibrators are formed in the membrane, wherein the support structure is formed as a permanent part of the membrane (see page 15, lines 11 to 15).
Therefore, the subject-matter of amended claim 1 is not new.

2.2 As far as the general disclosure of D3 is concerned, it is noted that D3 describes a transducer with a continuous membrane, i.e. a transducer in which the membrane is not disturbed by openings (see column 5, lines 19 to 22). Therefore, also the document D3 discloses a transducer according to the amended claim 1 (see column 1, lines 10, 19 to 28; column 4, lines 23 to 35, 40, 41, 54 to 59, 66, 67; column 6, lines 28 to 31).

Therefore, the subject-matter of claim 1 is not new also with respect to D3.

2.3 It is noted that the independent method claim 12 corresponds to independent claim 1 in that for every structural feature of the characterising portion of claim 12 a corresponding method step is defined therein.

Moreover D1 discloses the steps of :

- manufacturing a combination piece, which includes the first electrode, the membrane, and the support structure of the membrane (see page 8, lines 16 to 20);
- charging the membrane after the manufacture of the combination piece (see page 5, lines 14, 15; page 6, lines 20, 21).

Therefore with respect to document D1 also the subject-matter of amended independent claim 12 is not new.

2.4 The dependent claims 2, 4 to 9, 11, 13, 15, 16 and 18 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty:

- claims 2, 4, 5: D1 discloses the cavities (see figure 3), the channels (see page 8, lines 24, 25) and the fixed structure (see page 8, lines 8 to 11);
- claims 6, 11, 15, 18: D1 discloses the permanently charged electromechanical insulating membrane (see page 5, lines 3, 14, 15; page 6, lines 20, 21);
- claims 7 to 9, 13: D1 discloses the gluing (see page 8, lines 19, 20) and the electrode formed on a surface of the membrane (see page 5, line 19; figure 3);
- claim 16: D1 discloses the method of manufacturing (see point 1.1 and figure 3).

3. The dependent claims 3, 10, 14 and 17 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (Article 33(3) PCT):
- claims 3, 10: the use of these cavities and the manufacturing on the surface of the device case are merely one of several straightforward possibilities from which the skilled person would select, without the exercise of inventive skill, in order to improve the system reliability;
 - claims 14, 17: the use of a pre-tension is a normal design procedure for the skilled person in order to improve the system reliability (see the document D3, column 4, lines 40, 41).
4. The application does not meet the requirements of Article 6 PCT, because amended claims 1 and 3 are not clear.
- 4.1 The following feature:
- *"the support structure is formed as a permanent part of the membrane"* in the apparatus claim 1, lines 9, 10 relate to a method of using the apparatus rather than clearly defining the apparatus in terms of its technical features. The intended limitations are therefore not clear from this claim, contrary to the requirements of Article 6 PCT.
- 4.2 The term *"essentially the same size"* used in claim 3, line 21, is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT.
5. It is noted that the embodiments described in figures 1A, 1B and 2 are not covered by claim 1 (see PCT Guidelines, Part II, para. 5.29)